**Install drivers**

Windows

**Install programs**

Natural Color

MagicTune™

# SyncMaster 931BW

## Notation

Please read the following safety instructions as they are designed to prevent damage to property and harm to the user.

### Warning / Caution

Failure to follow directions noted by this symbol could result in bodily harm or damage to the equipment.

### Notational Conventions

| | | | |
|---|---|---|---|
| Prohibited | | Important to read and understand at all times | |
| Do not disassemble | | Disconnect the plug from the outlet | |
| Do not touch | | Grounding to prevent an electric shock | |

Notation | Power | Installation | Cleaning and Use | Others

## Power

When not used for extended period of time, set your computer to DPMS.
If using a screen saver, set it to active screen mode.

Shortcut to Anti-Afterimage Instructions

- Do not use a damaged or loose plug.
  - This may cause electric shock or fire.

- Do not pull the plug out by the wire nor touch the plug with wet hands.
  - This may cause electric shock or fire.

- Use only a properly grounded plug and receptacle.
  - An improper ground may cause electric shock or equipment damage.

- Insert the power plug firmly so that it does not come loose.
  - A bad connection may cause fire.

- Do not excessively bend the plug and wire nor place heavy objects upon them, which could cause damage.
  - This may cause electric shock or fire.

- Do not connect too many extension cords or plugs to one outlet.
  - This may cause fire.

- Do not disconnect the power cord while using the monitor.
  - A surge may be caused by the separation and may damage the monitor.

- Do not use the power cord when the connector or plug is dusty.
  - If the connector or plug of the power cord is dusty, clean it with a dry cloth.
  - Using the power cord with a dusty plug or connector may cause an electric shock or fire.

## Installation

Be sure to contact an authorized the Service Center when installing your set in a location with heavy dust, high or low temperatures, high humidity, and chemical substances, or where it will be operated for 24 hours continuously such as an airport, train station or etc.

Failure to do so may cause serious damage to your set.

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- Place your monitor in a location with low humidity and a minimum of dust.
  - Failure to do so may cause electric shock or fire inside the monitor.

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- Do not drop the monitor when moving it.
  - This may cause damage to the product or the person carrying it.

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- Install the monitor base in a showcase or shelf so that the end of the base does not protrude from the showcase or shelf.
  - Dropping the product may cause damage to the product or the person carrying it.

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- Do not place the product on an unstable or small surface area.
  - Place the product on an even, stable surface, as the product may fall and cause harm to someone walking by, specifically children.

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- Do not place the product on the floor.
  - Take care, as someone, specifically children may trip over it.

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- Keep any flammable objects such as candles, insecticides or cigarettes away from the product.
  - Otherwise, this may cause fire.

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- Keep any heating devices away from the power cable.
  - A melted coating may cause electric shock or fire.

- Do not install the product in places with poor ventilation, for instance, a bookshelf, closet, etc.
  - Any increase in internal temperature may cause fire.

- Set down the monitor carefully.
  - The monitor could be damaged or broken.

- Do not place the monitor face down.
  - This may damage the TFT-LCD surface.

- Installing a wall bracket must be done by a qualified professional.
  - Installation by unqualified personnel may result in injury.
    Always use the mounting device specified in the owner's manual.

- When installing the product, make sure to keep it away from the wall (more than 10 cm/4 inch) for ventilation purposes.
  - Poor ventilation may cause an increase in the internal temperature of the product, resulting in a shortened component life and degraded performance.

- Keep the plastic packaging (bag) out of children's reach.
  - The plastic packaging (bag) may cause suffocation if children play with it.



## Cleaning and Use

When cleaning the monitor case or the surface of the TFT-LCD screen, wipe with a slightly moistened, soft fabric.

- Do not spray water or detergent directly on the monitor.
  - This may cause damage, electric shock or fire.

- Use the recommended detergent with a smooth cloth.

- If the connector between the plug and the pin is dusty or dirty, clean it properly with a dry cloth.
  - A dirty connector may cause electric shock or fire.

- Make sure to unplug the power cord before cleaning the product.
  - Otherwise, this may cause electric shock or fire.

- Unplug the power cord from the power outlet and wipe the product using a soft, dry cloth.
  - Do not use any chemicals such as wax, benzene, alcohol, thinners, insecticide, air freshener, lubricant or detergent.

- Contact the SAMSUNG customer care center or Customer Center for interior cleaning once a year.
  - Keep the product's interior clean.
    Dust which has accumulated in the interior over an extended period of time may cause malfunction or fire.



## Others

- Do not remove cover (or back).
  - This may cause electric shock or fire.
    Refer servicing to qualified service personnel.

- If your monitor does not operate normally - in particular, if there are any unusual sound or smell coming from it - unplug it immediately and the Service Center.
  - This may cause electric shock or fire.

- Keep the product away from places exposed to oil, smoke or moisture; do not install inside a vehicle.
  - This may cause a malfunction, electric shock or fire.
    Especially avoid operating the monitor near water or outdoors where the monitor could be exposed to snow or rain.

- If the monitor is dropped or the casing is damaged, turn the monitor off and unplug the power cord. Then contact the Service Center.
  - The monitor may malfunction, causing an electric shock or fire.

- Disconnect the plug from the outlet during storms or lightening or if it is not used for a long period of time.
  - Failure to do so may cause an electric shock or fire.

- Do not try to move the monitor by pulling only the wire or the signal cable.
  - This may cause a breakdown, electric shock or fire due to damage to the cable.

- Do not move the monitor right or left by pulling only the wire or the signal cable.
  - This may cause a breakdown, electric shock or fire due to damage to the cable.

- Do not cover the vents on the monitor cabinet.
  - Bad ventilation may cause a breakdown or fire.

- Do not place water containers, chemical products or small metal objects on the monitor.
  - This may cause a malfunction, electric shock or fire.
    If a foreign substance enters the monitor, unplug the power cord and contact the Service Center.

- Keep the product away from combustible chemical sprays or inflammable substances.

- This may cause an explosion or fire.

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- Never insert anything metallic into the monitor openings.
  - This may cause electric shock, fire or injury.

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- Do not insert metal objects such as chopsticks, wire and gimlet or inflammable objects such as paper and match into the vent, headphone port or AV ports.
  - It may cause a fire or an electric shock.
    If an alien substances or water flows into the product, turn the product off, unplug the power connector from the wall outlet and contact the Service Center.

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- If you view a fixed screen for an extended period of time, residual image or blurriness may appear.
  - Change the mode to energy save or set a screensaver to moving picture when you need to be away from the monitor for an extended period of time.

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- Adjust the resolution and frequency to the levels appropriate for the model.
  - Inappropriate resolution may cause undesirable picture quality.

    19 inch Wide (48 cm) - 1440 X 900

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- Watching the monitor continuously at a too close angle may result in eyesight damage.

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- To ease eye strain, take at least a five-minute break after every hour of using the monitor.

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- Do not install the product on an unstable, uneven surface or a location prone to vibrations.
  - Dropping the product may cause damage to the product or the person carrying it.
    Using the product in a location prone to vibrations may shorten the lifetime of the product or may catch fire.

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- When moving the monitor, turn off and unplug the power cord. Make sure that all cables, including the antenna cable and cables connected to other devices, are disconnected before moving the monitor.

- Failure to disconnect a cable may damage it and lead to fire or an electric shock.

- Place the product out of children's reach, as they could damage by hanging onto it.
  - A falling product may cause injury to the person or even fatality.

- When not using the product for an extended time period, keep the product unplugged.
  - Otherwise, this may cause heat emission from the accumulated dirt or degraded insulation, leading to electric shock or fire.

- Do not place children's favorite objects (or anything else that may be tempting) on the product.
  - Children may try to climb on the product to retrieve an object.
    The product could fall, causing physical damage or even death.

## Proper Seating Posture During Monitor Use

- Try to maintain a good posture when using the monitor.
- Keep your back straight.
- Keep a distance of about 45 ~ 50 cm between your eyes and the monitor screen. Look at the screen from slightly above it, and have the monitor directly in front of you.
- Tilt the monitor upwards by 10 ~20 degrees. Adjust the monitor height so that the top of the monitor is slightly below eye level.
- Adjust the monitor angle so that there is no reflected light on the screen.Try to maintain your arms perpendicular to your armpits.
- Keep your arms level with the back of your hands.
- Keep the angle of the elbow perpendicular.
- Keep the angle of the knees at more than 90 degree. Do not let your feet fall up from the floor. Adjust the arm position so that it is below the heart.

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment) - Europe only

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they

can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

## Features

### RTA Monitor

RTA (Response Time Accelerator)

A function that accelerates the response speed of the panel so as to provide a sharper and more natural video display.

- RTA On Activates the RTA function so that the panel operates at a higher response speed than its original speed.
- RTA OFF Deactivates the RTA function so that the panel operates at its original response speed.

If you turn the power off and on again after switching RTA off, the RTA function is automatically switched On (Factory Setting)

Features | Package Contents | Your Monitor

## Package Contents

Please make sure the following items are included with your monitor.
If any items are missing, contact your dealer.
Contact a local dealer to buy optional items.

### Unpacking

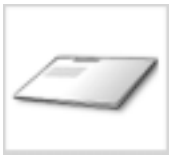
#### Without Stand

Monitor

#### With Stand

Monitor & Simple stand

### Manual

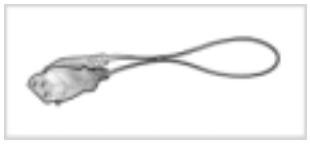


Quick Setup Guide

Warranty Card
(Not available in all locations)

User's Guide, Monitor Driver, Natural Color Software, MagicTune™ Software

### Cable



Power Cord

D-sub Cable

### Sold separately

DVI Cable



## Your Monitor

### Front

| | | |
|---|---|---|
| 1 | MENU button [ ] | Opens the on-screen menu and exits from the menu. |
| 2 | MagicBright™ button [ ] | MagicBright™ is a new feature providing optimum viewing environment depending on the contents of the image you are watching. Currently seven different modes are available: Custom, Text, Internet, Game, Sport and Movie, Dynamic Contrast. Each mode has its own pre-configured brightness value. You can easily select one of seven settings by simply pressing MagicBright™ control button.<br><br>1) Custom<br>Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste.<br>If this is the case, adjust the brightness and contrast by using the OSD menu.<br><br>2) Text<br>For documentations or works involving heavy text.<br><br>3) Internet<br>For working with a mixture of images such as texts and graphics.<br><br>4) Game<br>For watching motion pictures such as a game.<br><br>5) Sport<br>For watching motion pictures such as a sport.<br><br>6) Movie<br>For watching motion pictures such as a DVD or Video CD.<br><br>7) Dynamic Contrast<br>Dynamic Contrast is to automatically detect distribution of inputted visual signal and adjust to create optimum contrast.<br>>> Click here to see an animation clip |
| 3 | Brightness button [ ] | When OSD is not on the screen, push the button to adjust brightness. |

>> Click here to see an animation clip

| | | |
|---|---|---|
| 2 3 | Adjust buttons [▼/▲] | Adjust items in the menu. |
| 4 | Enter button [⏎] / SOURCE button | Activates a highlighted menu item. /<br>Push the 'SOURCE', then selects the video signal while the OSD is off. (When the source button is pressed to change the input mode, a message appears in the upper left of the screen displaying the current mode -- analog or digital input signal.)<br>If you select the digital mode, you must connect your monitor to the graphic card's DVI port using the DVI cable. |
| 5 | AUTO button | Use this button for auto adjustment.<br>>> Click here to see an animation clip |
| 8 | Power button [⏻] | Use this button for turning the monitor on and off. |
| | Power indicator | This light glows blue during normal operation, and blinking blue once as the monitor saves your adjustments. |

See PowerSaver described in the manual for further information regarding power saving functions. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods.

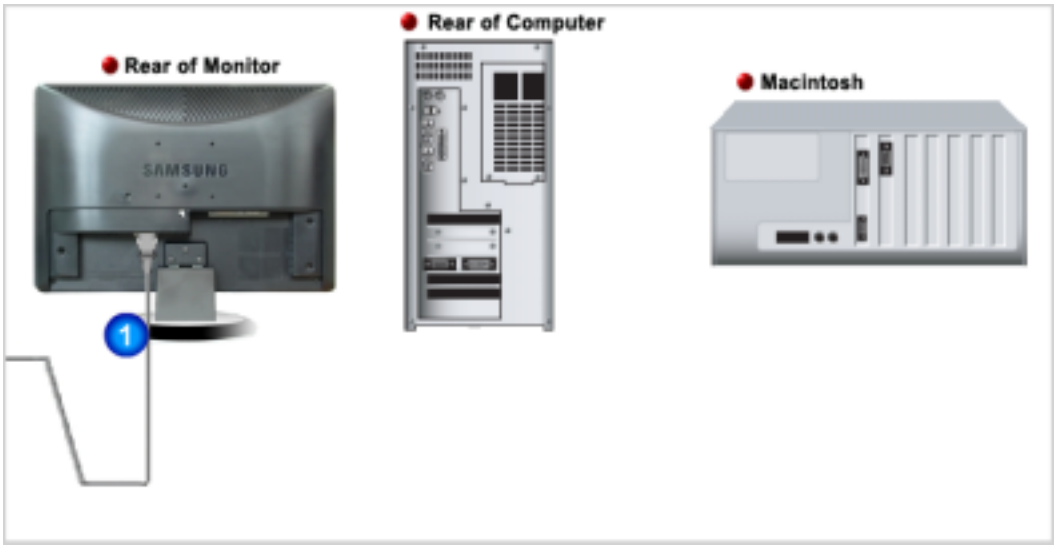
## Rear

The configuration at the back of the monitor may vary from product to product.

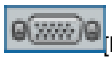
| | | |
|---|---|---|
| 1 | POWER port | Connect the power cord for your monitor to the power port on the back of the monitor. |
| 2 | DVI IN port | Connect the DVI Cable to the DVI port on the back of your monitor. |
| 3 | RGB IN port | Connect the signal cable to the 15-pin, D-sub port on the back of your monitor. |
| 4 | Kensington Lock | The Kensington lock is a device used to physically fix the system when using it in a public place.<br>The locking device has to be purchased separately.<br>For using a locking device, contact where you purchase it. |

See Connecting Cables for further information regarding cable connections.

## Connecting Cables




1. Connect the power cord for your monitor to the power port on the back of the monitor.
   Plug the power cord for the monitor into a nearby outlet.
2. Use a connection appropriate for your computer.
   - 2-1 Using the D-sub (Analog) connector on the video card.
     - Connect the signal cable to the 15-pin, D-sub port on the back of your monitor.

     
     [RGB IN]

   - 2-2 Using the DVI (Digital) connector on the video card.
     - Connect the DVI Cable to the DVI Port on the back of your Monitor.

     [DVI IN]

   - 2-3 Connected to a Macintosh.
     -Connect the monitor to the Macintosh computer using the D-sub connection cable.

If the monitor and the computer are connected, you can turn them on and use them.

Connecting Cables | Using the Stand

## Using the Stand

### Monitor Assembly

Monitor and Bottom

### Attaching a Base

This monitor accepts a 75 mm x 75 mm VESA-compliant mounting interface pad.

A. Monitor

B. Mounting interface pad (Sold separately)

1. Turn off your monitor and unplug its power cord.
2. Lay the LCD monitor face-down on a flat surface with a cushion beneath it to protect the screen.
3. Remove three screws and then remove the stand from the LCD monitor.
4. Align the mounting interface pad with the holes in the rear cover mounting Pad and secure it with four screws that came with the arm-type base, wall mount hanger or other base.

# Using the Software



## Monitor Driver

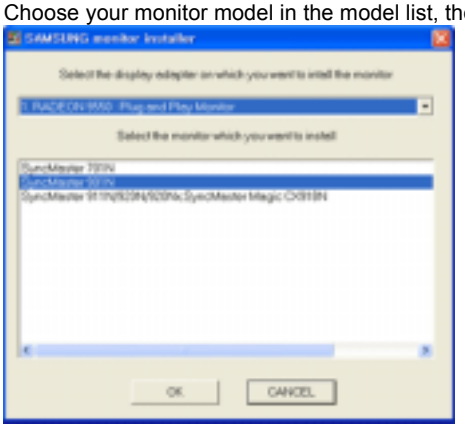
When prompted by the operating system for the monitor driver, insert the CD-ROM included with this monitor. Driver installation is slightly different from one operating system to another. Follow the directions appropriate for the operating system you have.

Prepare a blank disk and download the driver program file at the Internet web site shown below.

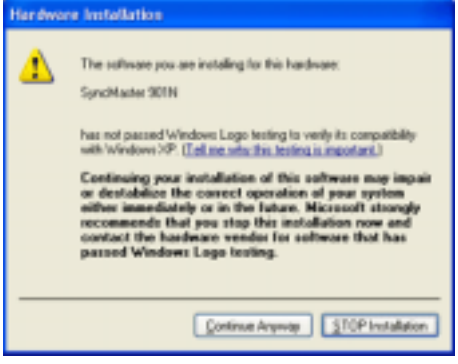
Internet web site :http://www.samsung.com/ (Worldwide)
http://www.samsung.com/monitor (U.S.A)
http://www.sec.co.kr/monitor (Korea)
http://www.samsungmonitor.com.cn/ (China)

### Installing the Monitor Driver (Automatic)

1. Insert CD into the CD-ROM drive.
2. Click **"Windows"**.
3. Choose your monitor model in the model list, then click the "OK" button.




4. If you can see following message window, then click the "Continue Anyway" button. Then click "OK" button (Microsoft® Windows® XP/2000 Operating System).


Hardware Installation
The software you are installing for this hardware:
SyncMaster 931N
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

This monitor driver is under certifying MS logo, and this installation doesn't damage your system.
The certified driver will be posted on Samsung Monitor homepage

http://www.samsung.com/

Monitor driver installation is completed.

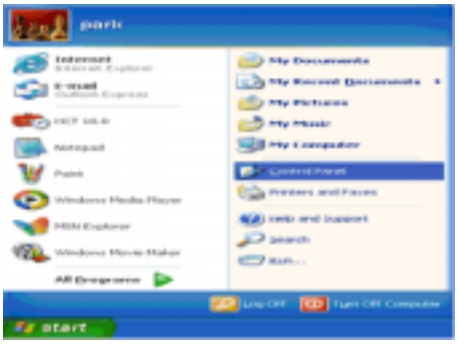
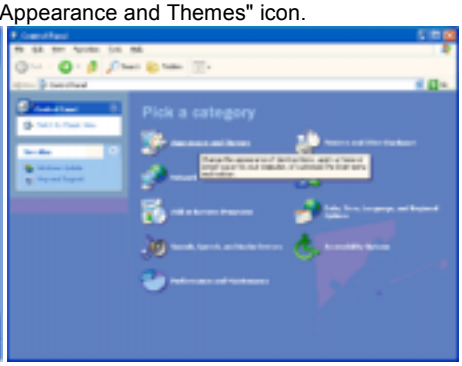
## Installing the Monitor Driver (Manual)

Windows XP | Windows 2000 | Windows ME | Windows NT | Linux

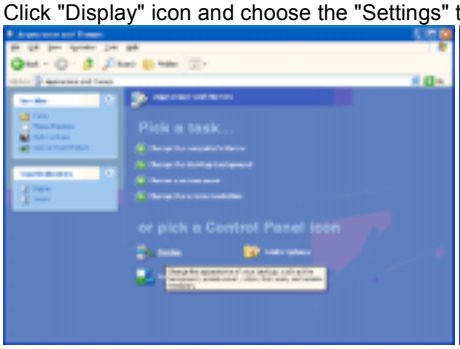
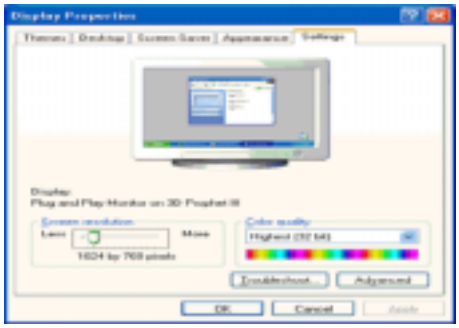
### Microsoft® Windows® XP Operating System

Insert CD into the CD-ROM drive.

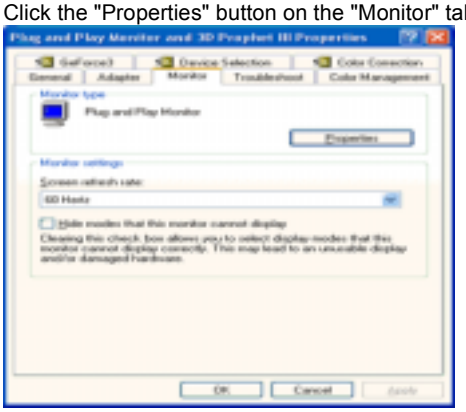
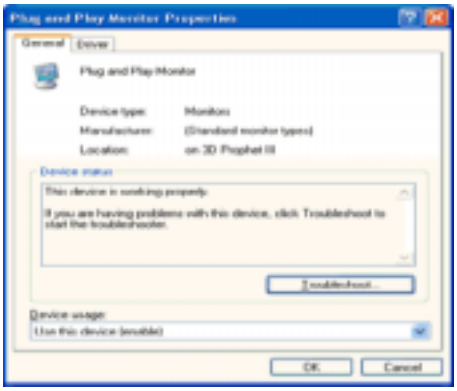
Click "Start" → "Control Panel" then click the "Appearance and Themes" icon.

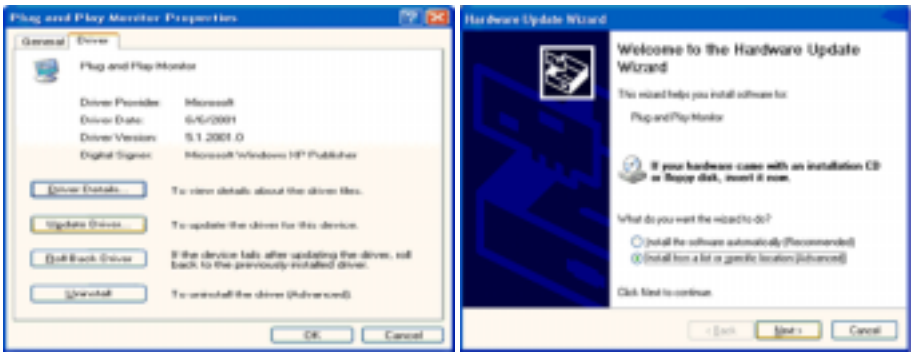
Click "Display" icon and choose the "Settings" tab then click "Advanced...".

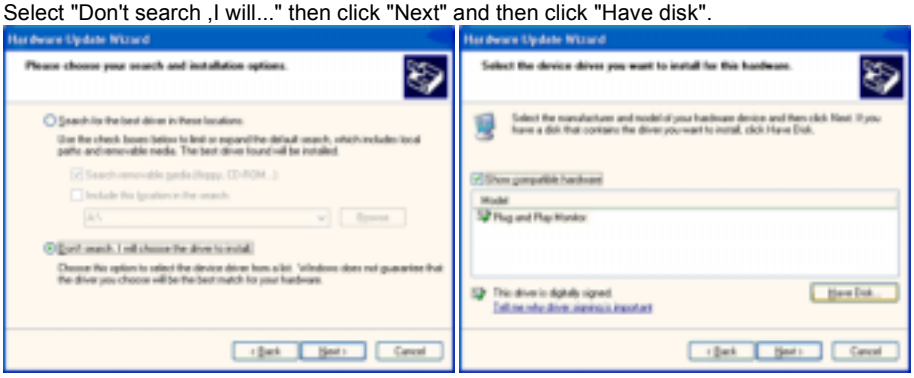
Click the "Properties" button on the "Monitor" tab and select "Driver" tab.

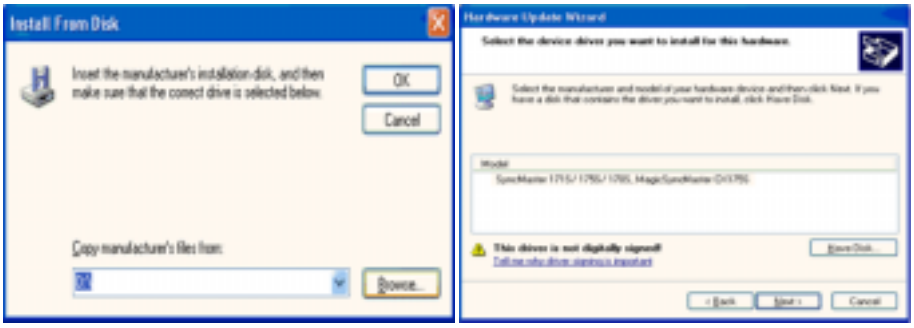
Click "Update Driver..." and select "Install from a list or..." then click "Next" button.



Select "Don't search ,I will..." then click "Next" and then click "Have disk".



Click the "Browse" button then choose A:(D:\Driver) and choose your monitor model in the model list and click the "Next" button.

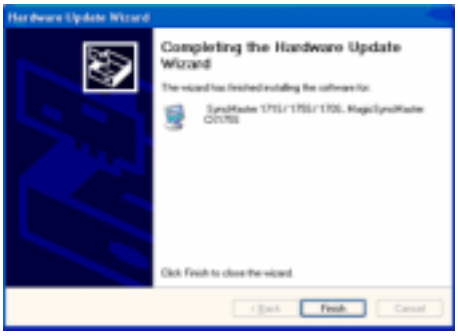


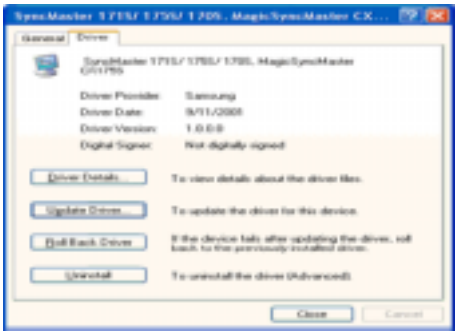
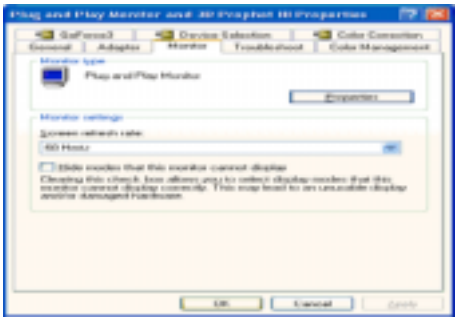
If you can see following "Message" window, then click the "Continue Anyway" button. Then click "OK" button.

This monitor driver is under certifying MS logo, and this installation doesn't damage your system.
The certified driver will be posted on Samsung Monitor homepage

http://www.samsung.com/

Click the "Close" button then click "OK" button continually.



⓫ Monitor driver installation is completed.

## Microsoft® Windows® 2000 Operating System

When you can see "Digital Signature Not Found" on your monitor, follow these steps.

1. Choose "OK" button on the "Insert disk" window.
2. Click the "Browse" button on the "File Needed" window.
3. Choose A:(D:\Driver) then click the "Open" button and then click "OK" button.

How to install

1. Click "Start" , "Setting" , "Control Panel".
2. Double click the "Display" icon.
3. Select the "Settings" tab and click "Advanced Properties" button.
4. Choose "Monitor".
   - Case1 : If the "Properties" button is inactive, it means your monitor is properly configured. Please stop installation
   - Case2 : If the "Properties" button is active, click the "Properties" button then follow next steps continually.
5. Click "Driver" and then click on "Update Driver..." then click on the "Next" button.
6. Choose "Display a list of the known drivers for this device so that I can choose a specific driver" then click "Next" and then click "Have disk".
7. Click the "Browse" button then choose A:(D:\Driver).
8. Click the "Open" button, then click "OK" button.
9. Choose your monitor model and click the "Next" button then click "Next" button.
10. Click the "Finish" button then the "Close" button.

If you can see the "Digital Signature Not Found" window then click the "Yes" button. And click the "Finish" button then the "Close" button.

## Microsoft® Windows® Millennium Operating System

1. Click "Start" , "Setting" , "Control Panel".
2. Double click the "Display" icon.
3. Select the "Settings" tab and click "Advanced Properties" button.
4. Select the "Monitor" tab.
5. Click the "Change" button in the "Monitor Type" area.
6. Choose "Specify the location of the driver".
7. Choose "Display a list of all the driver in a specific location..." then click "Next" button.
8. Click the "Have Disk" button.
9. Specify A:\(D:\driver) then click "OK" button.

1. Select "Show all devices" and choose the monitor that corresponds to the one you connected to your computer and click "OK".
2. Continue choosing "Close" button and "OK" button until you close the Display Properties dialogue box.

### Microsoft® Windows® NT Operating System

1. Click "Start", "Settings", "Control Panel", and then double-click "Display" icon.
2. In Display Registration Information window, click Settings Tab and then click "All Display Modes".
3. Select a mode that you wish to use (Resolution, Number of colors and Vertical frequency) and then click "OK".
4. Click "Apply" button if you see the screen working normally after clicking "Test". If the screen is not normal, change to a different mode (lower mode of resolution, colors or frequency).

If there is no Mode at All Display Modes, select the level of resolution and vertical frequency by referring to the Preset Timing Modes in the user guide.

### Linux Operating System

To execute X-Window, you need to make the X86Config file, which is a type of system setting file.

1. Press "Enter" at the first and the second screen after executing the X86Config file.
2. The third screen is for setting your mouse.
3. Set a mouse for your computer.
4. The next screen is for selecting a keyboard.
5. Set a Keyboard for your computer.
6. The next screen is for setting your monitor.
7. First of all, set a horizontal frequency for your monitor. (You can enter the frequency directly.)
8. Set a vertical frequency for your monitor. (You can enter the frequency directly.)
9. "Enter" the model name of your monitor. This information will not affect the actual execution of X-Window.
10. You have finished setting up your monitor.
    Execute X-Window after setting other requested hardware.



## Natural Color

### Natural Color Software Program

One of the recent problems in using a computer is that the color of the images printed out by a printer or other images scanned by a scanner or a digital camera are not the same as those shown on the monitor. The Natural Color S/W is the very solution for this problem. It is a color administration system developed by Samsung Electronics in association with Korea Electronics & Telecommunications Research Institute (ETRI). This system is available only for Samsung monitors and makes the color of the images on the monitor the same as the printed or scanned images.

For more information, refer to Help (F1) in the software program.

### How to install the Natural Color software

Insert the CD included with the Samsung monitor into the CD-ROM Drive. Then, the initial screen of the program Natural Color will be executed. Click Natural Color on the initial screen to install the Natural Color software.

To install the program manually, insert the CD included with the Samsung monitor into the CD-ROM Drive, click the [Start] button of Windows and then select [Run...].
Enter D:\color\NCProSetup.exe and then press the [Enter] key.
(If the drive where the CD is inserted is not D:\, enter the applicable drive.)

### How to delete the Natural Color software program

Select "Setting/Control Panel" on the "Start" menu and then double-click "Add/Delete a program".
Select Natural Color from the list and then click the "Add/Delete" button.



MagicTune™ HELP



# Overview

### What is MagicTune™?

Monitor performance can vary due to the graphics card, host computer lighting conditions and other environmental factors. In order to get the best image on a monitor requires you to adjust it for your unique setting. Unfortunately, the manual controls available to tune the image often prove to be challenging. Proper adjustment (tuning) requires an easy to use program that goes through a step-by-step process to obtain the best overall picture quality.

In most cases even simple adjustments to Brightness, or Contrast require navigation of the multi-level, on-screen display (OSD) menus that are not easy to understand. Furthermore, there is no feedback to assist in correctly setting the controls of the monitor. MagicTune™ is a software utility that guides you through the tuning process with easy to understand instructions and back ground patterns designed for each monitor control. The display settings for each user can be saved, providing an easy way to select display characteristics in a multi-user environme or having a single user have multiple defined presets based on content and ambient lighting.

### Basic Functionality

MagicTune™ is a software utility that allows monitor adjustment and color tuning using the Display Data Channel Command Interface (DDC/CI) protocol. All adjustments to the display are controlled via software to eliminate the need to use the monitor on-screen display (OSD).
MagicTune™ supports Windows™ 98 SE, Me, 2000, XP Home, and XP Professional.
It is recommended using MagicTune™ in Windows™ 2000 or later.

MagicTune™ allows for quick accurate tuning of the display with the ability to easily save and use monitor configurations that are best suited for you.

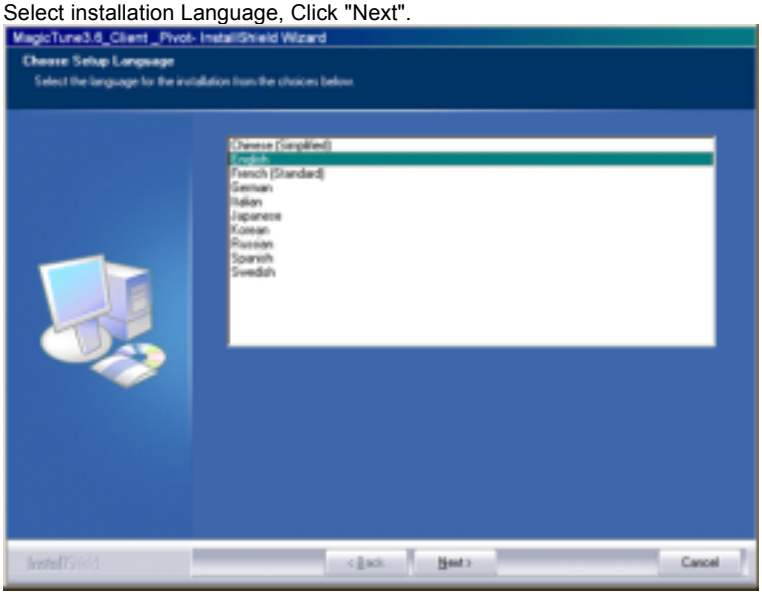
### OSD Mode

The OSD mode allows easy adjustment of monitor settings without taking pre-defined steps. You can access the desired menu item to set with ease.

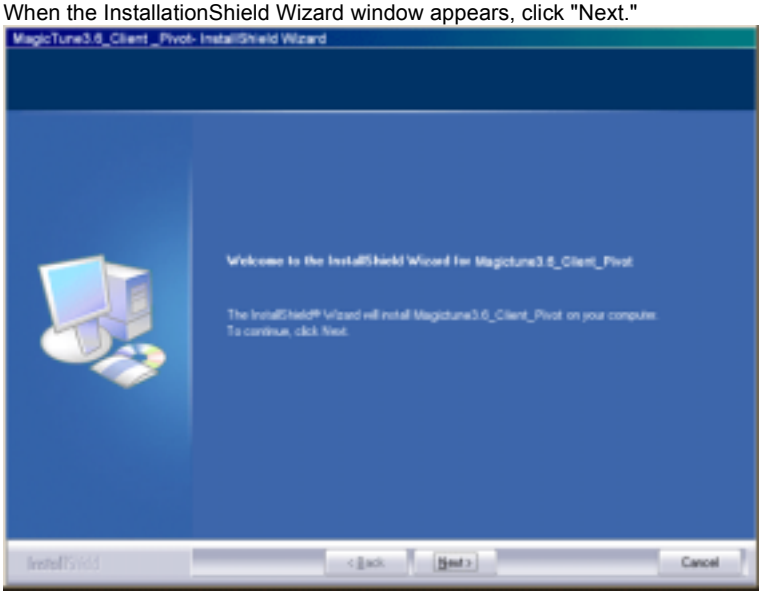


# Installation

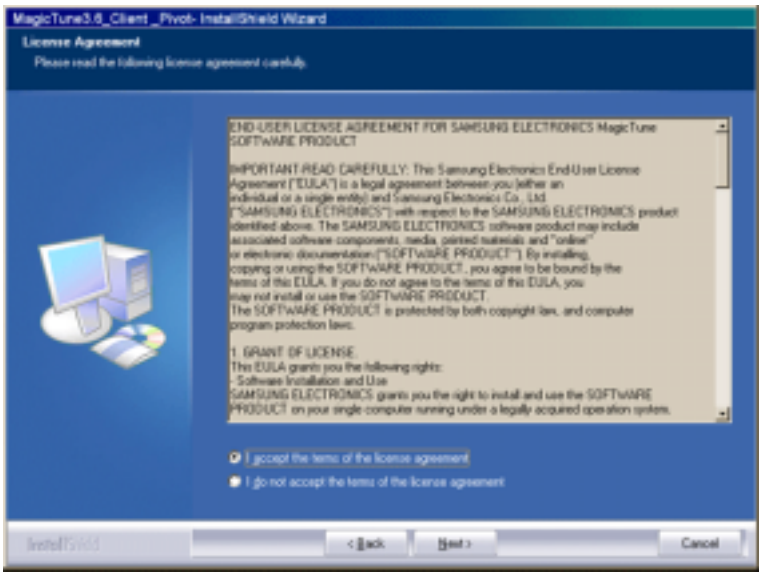
1. Insert the installation CD into the CD-ROM drive.
2. Click the MagicTune™ installation file.
3. Select installation Language, Click "Next".



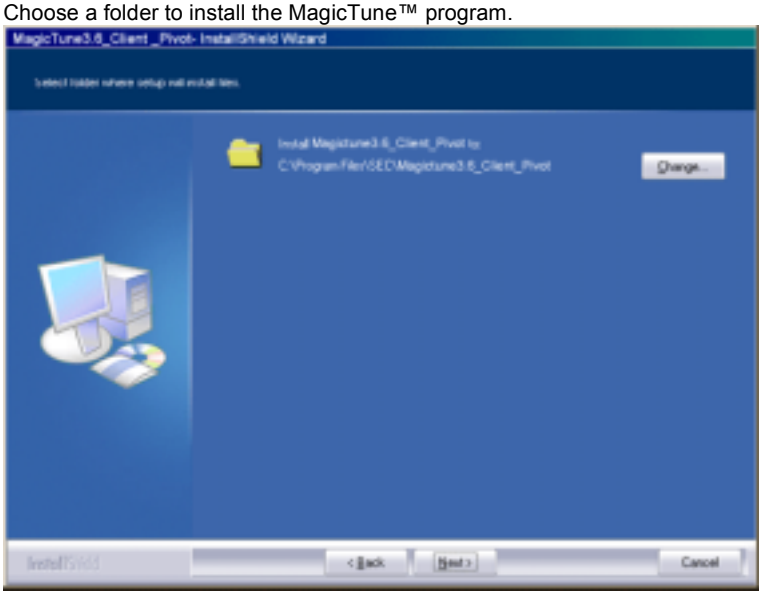

4. When the InstallationShield Wizard window appears, click "Next."


MagicTune3.6_Client_Pivot- InstallShield Wizard
Welcome to the InstallShield Wizard for Magictune3.6_Client_Pivot
The InstallShield® Wizard will install Magictune3.6_Client_Pivot on your compute
To continue, click Next.
InstallShield
< Back
Next >
Cancel

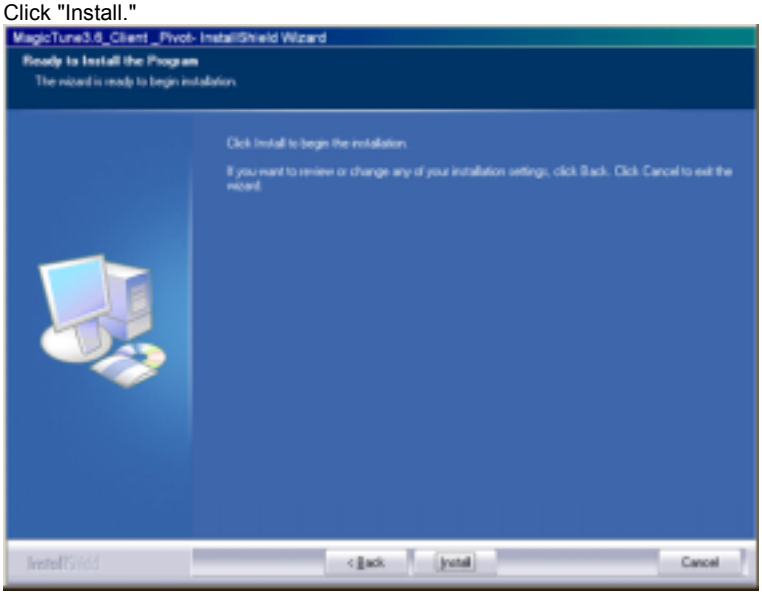
5. Select "I agree to the terms of the license agreement" to accept the terms of use.


MagicTune3.6_Client_Pivot- InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
END-USER LICENSE AGREEMENT FOR SAMSUNG ELECTRONICS MagicTune SOFTWARE PRODUCT
IMPORTANT-READ CAREFULLY: The Samsung Electronics End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and Samsung Electronics Co., Ltd. ("SAMSUNG ELECTRONICS") with respect to the SAMSUNG ELECTRONICS product identified above. The SAMSUNG ELECTRONICS software product may include associated software components, media, printed materials and "online" or electronic documentation ("SOFTWARE PRODUCT"). By installing, copying or using the SOFTWARE PRODUCT, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, you may not install or use the SOFTWARE PRODUCT.
The SOFTWARE PRODUCT is protected by both copyright law, and computer program protection laws.
1. GRANT OF LICENSE.
This EULA grants you the following rights:
- Software Installation and Use
SAMSUNG ELECTRONICS grants you the right to install and use the SOFTWARE PRODUCT on your single computer running under a legally acquired operation system.
I accept the terms of the license agreement
I do not accept the terms of the license agreement
InstallShield
< Back
Next >
Cancel

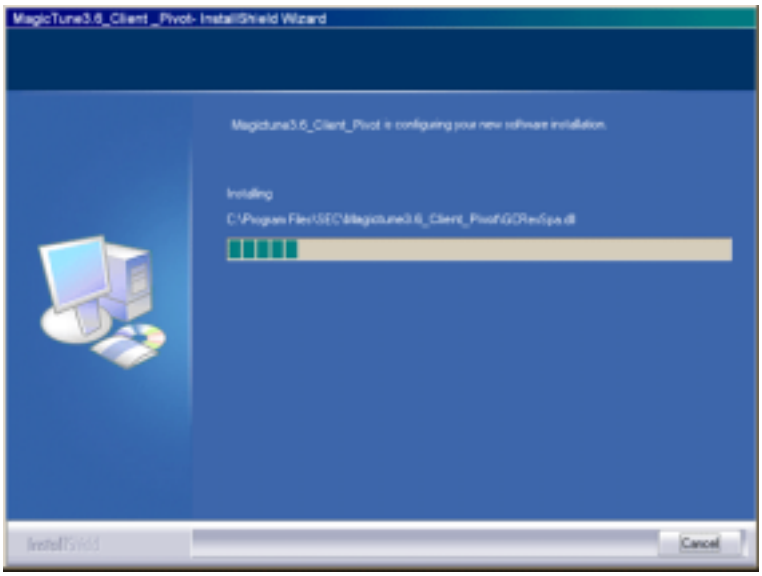
6. Choose a folder to install the MagicTune™ program.



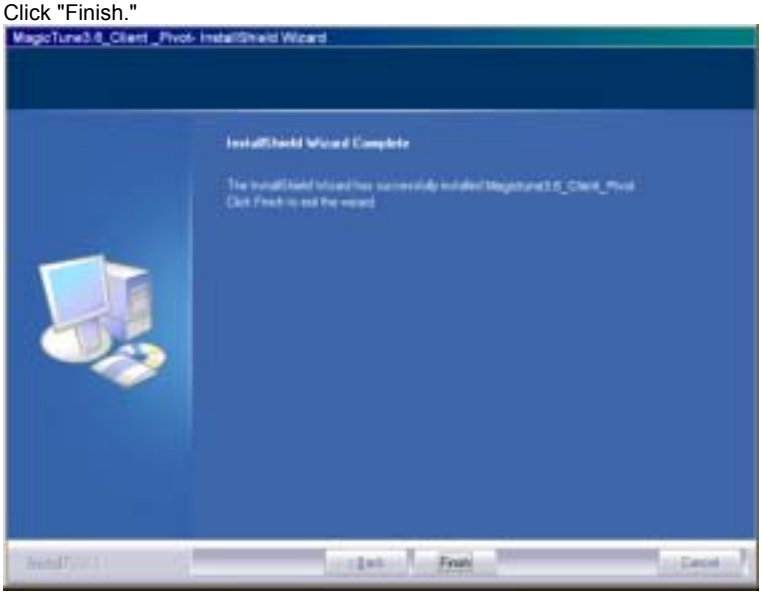

7. Click "Install."


MagicTune3.6_Client_Pivot- InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

8. The "Installation Status" window appears.




9. Click "Finish."




10. When the installation is completed, the MagicTune™ executable icon appears on your desktop.

Double-click the icon to start the program.

MagicTune™ execution icon may not appear depending on specification of computer system or monitor.
If that happens, press F5 Key.

### Installation Problems

The installation of MagicTune™ can be affected by such factors as the video card, motherboard and the network environment.
See "Troubleshooting" if you have trouble during installation.

### System Requirements

**OS**

- Windows™ 98 SE

- Windows™ Me
- Windows™ 2000
- Windows™ XP Home Edition
- Windows™ XP Professional

**It is recommended using MagicTune™ in Windows™ 2000 or later.**

**Hardware**

- 32MB Memory above
- 25MB Hard disk space above

* For more information, visit the MagicTune™ website.



MagicTune™ allows for quick accurate tuning of the display with the ability to easily save and use monitor configurations that are best suited for you.

- **OSD mode may appear inconsistent with the explanation in guidance book depending on specification of each monitor.**
- **When Pivot is functioning, part of MagicTune™ Program may not operate normally.**
- **AutoRotation : AutoRotation will automatically pivots the monitor to 0, 90, 180degrees when you pivots the monitor.**

**To execute Rotation, it should be done as below.**
- Please install both of Rotation program and MagicTune™ 3.6 in your PC.
- Launch MagicTune™ 3.6
- **Option** → **Preference** → click the small box as "V" in **enable task tray menu**.

- **MagicTune™ control mode will be different according to monitor models.**

# OSD Mode

The OSD mode makes the adjustment of settings on all monitors easy. When selected , each tab on top of the control window displays the general descriptions of the sub-menu items for adjustment.
When selected, each tab displays a list of menus. For quick adjustment of the monitor settings, the OSD mode allows easy and convenient access to all tabs and sub-menu items.

**Button Tab Definition**

| | |
|---|---|
| **OK** | Applies any changes made and exits MagicTune™. |
| **Reset** | Restores the display settings to the factory settings. |
| **Cancel** | Exits MagicTune™ without applying the changes made. If you have not made any changes in the control window, clicking "Cancel" does not cause any actions. |

**Picture Tab Definition**

Allows the user to adjust the screen settings to the desired values.

| | |
|---|---|
| **Brightness** | Makes the entire screen brighter or darker. The detailed data of the images in the dark areas can be lost if the brightness is not adjusted to the proper level. Adjust the brightness for best viewing conditions. |
| **Contrast** | Adjusts the difference in brightness between the bright and dark areas on screen. Determines the crispness of the images. |
| **Resolution** | Lists all display resolutions supported by the program. |
| **MagicBright™** | MagicBright™ is a new feature providing the optimum viewing environment depending on the contents of the image you are watching. Currently four different modes are available: Text, Internet,Game, Sport, Movie and Custom. Each mode has its own pre-configured brightness value. You can easily select one of six settings by simply pressing MagicBright control buttons.<br>1. Text: For documentations or works involving heavy text.<br>2. Internet: For working with a mixture of images such as text and graphics.<br>3. Game : For watching motion pictures such as a Game.<br>4. Sport : For watching motion pictures such as a Sport.<br>5. Movie: For watching motion pictures such as a DVD or Video CD.<br>6. Custom: Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the Brightness and Contrast by using the OSD menu.<br>7. Dynamic Contrast: Dynamic Contrast is to automatically detect distribution of inputted visual signal and adjust to create optimum contrast.<br> MagicBright control mode will be different according to monitor models. Some monitor will only support Four modes(Text, Internet, Entertain, Custom) |

**Color Tab Definition**

Adjusts the "warmth" of the monitor background or image color.

MagicColor, Gamma will be shown only in the monitor that supports these functions.

| | |
|---|---|
| **Color Control** | Adjusts of the monitor image color.<br>You can change the monitor color to your desired color.<br>• R- G - B |
| **Calibration** | The process through which the colors of your choice are optimized and maintained. You will find MagicTune™ extremely useful if you are one of those who wish to view images with their full details accurately reproduced - including web images and ones produced by a digital camera or scanner. |

MagicColor is a new technology that Samsung has exclusively developed to improve digital image and to display natural color more clearly without disturbing image quality.

1. OFF : Returns to the original mode.
2. DEMO : The screen before applying MagicColor appears on the right and the screen after applying MagicColor appears on the left.
3. Full : Displays not only vivid natural color but also more realistic natural skin color with

clearness.

4. Intelligent : Displays vivid natural color with clearness.
5. MagicZone
   - The MagicZone ensures the clear and sharp display of animated multimedia or photo images by enhancing the brightness, sharpness, saturation, Hue of a certain area on the screen. This offers an easy-to-use interface that highlights the video-playing portion of your multimedia program by automatically detecting and highlight the desired area by dragging.
   - When the mouse cursor is activated( )and it is necessary to de-activate it to use it for other tasks, right click your mouse, or put the activated cursor ( )on the taskbar and click. When de-activated, the icon on the screen changes back to the one shown before activation.
   - Especially, MagicZone is appropriate to using the moving picture.
   - **Auto Detect** : If you run the Movie in some players, MagicZone will automatically get the play screen highlighted (it will be supported in players of Gom, Adrenalin, KCP, Window Media, and Power DVD etc., )Some other players also can be highlighted but could have some problems.

**MagicColor**

- Tusk menu

| | |
|---|---|
| **HUE** | Adjust the tint of the color. |
| **Saturation** | Adjusts the color saturation. |
| **Brightness** | Adjusts the Brightness. |
| **Sharpness** | Adjusts the difference between the lightest and darkest areas of the display. |
| **Zone Off** | Turn off the zone that you have captured. |
| **Reset** | Returns to the the default setting that vendor has set. |

- Depending on the monitor models **Color Control, Sharpness, Contrast** will not be adjustable in MagicColor mode of **Full and Intelligent.**
- MagicTune™ will be disappear if you excute MagicZone, and closing the MagicZone after adjusting, will show the MagicTune™ again.
  (System Tray is Unhecked)
  MagicTune™ will be disappear if you excute MagicZone, and closing the MagicZone after adjusting. will not show MagicTune™ again.
  (System Tray is Checked)
- MagicColor mode will be different according to monitor models.
  MagicZone mode will show if the monitor supports the function.

---

Gamma correction changes the luminance of the colors with intermediate luminance.

**Gamma**

Gamma mode will be different according to monitor models. Some monitor will only support Three modes.( Mode1, Mode2, Mode3)

---

**Image Tab Definition**

Adjusts the Fine , Coarse and Position values.

---

**Image Setup**

- Fine : Removes noise such as horizontal stripes.
  If the noise persists even after Fine tuning, repeat it after adjusting the frequency (clock speed).
- Coarse : Removes noise such as vertical stripes.
  Coarse adjustment may move the screen image area.
  You may relocate it to the center using the Horizontal Control menu.
- Auto Setup : Auto adjustment allows the monitor to self-adjust to the incoming

| | |
|---|---|
| | video signal. The values of fine, coarse and position are adjusted automatically. |
| **Position** | Adjusts the screen location horizontally and vertically. |
| **Sharpness** | Changes the clearance of image. |

### Option Tab Definition

You can configure MagicTune™ using the following options.

| | |
|---|---|
| **Preferences** | Loads the Preferences Dialog Box. Preferences in use will have an "V" in the check box. To turn on or off any Preference, position the cursor over the box and click.<br>• Enable task tray menu .<br>- To access the MagicTune™ menus, click the icon on the [task tray menu]. The menus are not displayed if the [Enable System Tray] is deselected in [Options] ' [Basic Settings].<br>• Select Language - The language chosen affects only the language of the OSD. |
| **Source Select** | • Analog<br>• Digital |

### Support Tab Definition

Shows the Asset ID and the version number of the program, and allows you to use the Help feature.

| | | |
|---|---|---|
| **Help** | Visit the MagicTune™ website or click to open the Help files (User Manual) if you need any help installing or running MagicTune™. The User Manual opens within a basic browser window. | |
| **Asset ID** | you can use the server to control the Client monitor.<br>(Server program should be installed to use this program as Client) | |
| | **User Name** | Shows the user name that is registered in PC. |
| | **User ID** | Shows the user ID that is register in PC. |
| | **Server IP** | Write down the server IP . |
| | **Department** | Write down the department. |
| | **Location** | Write down the location. |
| **Version** | Displays the version of MagicTune™. | |

# Color Calibration

### Color Calibration

Color Calibration guides you to get optimal color condition for your monitor.

Proceed following 5steps for getting optimal monitor color condition .

1. Control "Brightness control bar" for matching the brightness of control patch and the brightness of background pattern
2. When you detect specific color tone on "Control patch", move the control cursor toward to the direction of the color tone referring to "Color reference Circle".
   => Adjustment is finished properly, you won't detect any color tone on Control patch.
3. When you finish adjustment for step1,Click "Next" button .
4. Repeat 1), 2), 3) procedures for remaining step2 ~ step5.
5. You can easily view the calibration effect through clicking "Preview " button!

**How multiple users can use adjusted color values**

**Definition**
When monitor is used by multiple users, color values which are adjusted via Color calibration for each users can be saved and used. Up to 5 users can use the saved color values.

1. How to save adjusted color values:
   Press Next to make it change into Apply and then you can save adjusted color values.
   As many as 5 values can be saved.
2. How to apply the saved color values:
   Press Multi User button on main screen to select and use one of the saved color values.

### Preview

Press "Preview" button on the Color Calibration.
The above picture will be shown.

1. Press "View Calibrated" button to see the calibration effect which you adjusted.
2. Press "View Uncalibrated" button to see the original image.



# Uninstall

The MagicTune™ program can be removed only by using the "Add or Remove Programs" option of the Windows™ Control Panel.

Perform the following steps remove MagicTune™.

1. Go to [Task Tray] ' [Start] ' [Settings] and select [Control Panel] in the menu. If the program runs on Windows™ XP, go to [Control Panel] in the [Start] menu.
2. Click the "Add or Remove Programs" icon in Control Panel.
3. In the "Add or Remove Programs" screen, scroll down to find "MagicTune™." Click on it to highlight it.
4. Click the "Change/Remove" button to remove the program.
5. Click "Yes" to begin the uninstall process.
6. Wait until the "Uninstall Complete" dialog box appears.

Visit the MagicTune™ website for technical support for MagicTune™, FAQs (questions and answers) and software upgrades.



# Troubleshooting

**The current computing system is not compatible with MagicTune™.**

**Please press OK and click on the "Shortcut to the MagicTune™ site" to view our home page for further reference.**

An error may occur when your video/graphic card is not in the 'Available' list.
(The latest or oldest video cards may not be compatible.)

Please visit our homepage to see the Troubleshooting section.

An error may occur if the card maker has modified the video card driver or the graphics chip even when the video card is in the list.

Please visit our homepage to see the Troubleshooting section.

Check if your monitor is manufactured by Samsung.
Products from other manufacturers may cause errors.

Only Samsung products are able to support this feature.

An error may occur even when your monitor is manufactured by Samsung but is out of date. Check if your monitor is able to support MagicTune™.

This feature is only supported by those monitors that are registered on our homepage. Check for the monitor before purchasing it as out-of-date models are not supported.

An error occurs when no information on EDID (Extended Display Identification Data) exists for the current monitor.
This happens when from your desktop, Start → Setup → Control Panel → System → Hardware → Device Manager → Monitor is selected, the current "Plug-and-play monitor" is removed and new hardware is searched for but the system couldn't find any "Plug-and-play monitor".

Please visit our homepage to see the Troubleshooting section.

An error occurs when replacing the monitor with a new one when the system power is off but the system has not been restarted.

Please restart the system each time the monitor is replaced before using MagicTune™.

An error occurs when the video card driver is not installed properly.
This happens when the current video card list is not displayed normally. You can check this via Start → Setup → System → Hardware → Device Manager → Display Adapter.

Visit the video card maker's homepage and download and install the latest driver.
For more information about the video card, contact the card manufacturer.

**To ensure normal operation, please restart your system.**

An error occurs when the system is not restarted after installing MagicTune™.
(This is for Win98SE and WinMe only.)

Restart the system before use.

**For the best performance of MagicTune™, adjust to the optimal resolution.**

**Refer to the User Guide for the optimal resolution.**

If you do not adjust to the optimal resolution and perform Color Calibration, the monitor cannot be adjusted to the optimal condition.

Refer to the manual for the optimal resolution.

**This video card does not support MagicTune™.**

**Please install a new video card driver.**

An error occurs when the video card driver is not installed properly.
This happens when the current video card list is not displayed normally. You can check this from Start → Setup → System → Hardware → Device Manager → Display Adapter.

Visit the video card manufacturer's homepage and download and install the latest driver.
For more information about the video card, contact the card manufacturer.

**As the Highlight program uses the communication lines,**

**please exit the Highlight program before you can access MagicTune™.**

Some of Samsung CDT monitors support the Highlight feature.
When using both the Highlight feature and MagicTune™ simultaneously, conflicts occur, which cause errors.

Make sure to turn OFF Highlight before using MagicTune™.

# Troubleshooting

- MagicTune™ may not work in case monitor is replaced or driver of graphic card is updated while MagicTune™ is operating. If so, please restart the system.

| Symptom | Check List | Solutions |
|---|---|---|
| Check when MagicTune™ does not function properly. | MagicTune™ feature is found only on PC (VGA) with Window OS that supports Plug and Play. | * To check whether your PC is available for MagicTune™ feature, follow the steps below (When Windows™ is XP);<br><br>Control Panel → Performance and Maintenance → System → Hardware → Device Manager → Monitors → After deleting Plug and Play monitor, find 'Plug and Play monitor' by searching new Hardware.<br><br>MagicTune™ is an additional software for the monitor. Some graphic cards may not support your monitor. When you have a problem with the graphic card, visit our website to check the compatible graphic card list provided.<br>http://www.samsung.com/monitor/magicTune |
| MagicTune™ doesn't work properly. | Have you changed your PC or video graphic card? | Download the latest program. The program can be downloaded<br>http://www.samsung.com/monitor/magicTune |

- Visit the MagicTune™ website for technical support for MagicTune™, FAQs (questions and answers) and software upgrades.
- Visit the MagicTune™ website and download the installation software for MagicTune™ MAC.

The MagicTune™ program is an additional program for monitor products.
Some computing systems that install either an older or the latest video driver are not compatible with MagicTune™.
Please visit the MagicTune™ Website for technical support for MagicTune™.
Specifications subject to change without notice.
MagicTune™ is a trademark of SAMSUNG ELECTRONICS CO., Inc.
Windows™ is a registered trademark of Microsoft Corp.
Other trademarks are property of their respective holders.

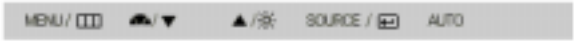
## Control Buttons

1. [MENU / ] Opens the OSD menu. Also use to exit the OSD menu or return to the previous menu.
2. [▼/▲] These buttons allow you to adjust items in the menu.
3. [] Press this button to activate a highlighted menu item.
4. [AUTO] When the 'AUTO' button is pressed, the Auto Adjustment screen appears as shown in the animated screen on the center.

Control Buttons Direct Functions OSD Function

## Direct Functions

### AUTO




| Menu | Description |
|---|---|
| AUTO | When the 'AUTO' button is pressed, the Auto Adjustment screen appears as shown in the animated screen on the center.<br>Auto adjustment allows the monitor to self-adjust to the incoming Analog signal. The values of fine, coarse and position are adjusted automatically.<br>(Available in Analog mode only)<br><br>To make the automatic adjustment function sharper, execute the 'AUTO' function while the AUTO PATTERN is on.<br><br>▸ If auto adjustment does not work properly, press 'AUTO' button again to adjust picture with more accuracy.<br>▸ If you change resolution in the control panel, auto function will be executed automatically. |

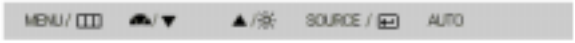
**OSD Locked & Unlock**

- AUTO

MENU

| Menu | Description |
|---|---|
| OSD Locked & Unlock | This is the function that locks the OSD in order to keep the current states of settings or prevent others from adjusting the current settings.<br><br>**Locked** : Hold down the menu button for more than five (5) seconds to activate the OSD adjustment lock function.<br><br>**Unlock** : Hold down the menu button for more than five (5) seconds to deactivate the OSD adjustment lock function.<br><br>Though the OSD adjustment lock function is activated, you can still adjust the brightness and contrast, and adjust MagicBright ( ) using the Direct button. |

MagicBright™




| Menu | Description |
|---|---|
| MagicBright™ | Push the MagicBright™ button to circle through available preconfigured modes.<br><br>- seven different modes (Custom/Text/Internet/Game/Sport/Movie/Dynamic Contrast) |

## Brightness

| Menu | Description |
|---|---|
| Brightness | When OSD is not on the screen, push the button to adjust brightness. |

## SOURCE

| Menu | Description |
|---|---|
| SOURCE | Selects the Video signal while the OSD is off. (Analog/Digital) |



## OSD Function

| | | | | | | |
|---|---|---|---|---|---|---|
| **Picture** | Brightness | Contrast | | | | |
| **Color** | MagicColor | Color Tone | Color Control | Gamma | | |
| **Image** | Coarse | Fine | Sharpness | H-Position | V-Position | |
| **OSD** | Language | H-Position | V-Position | Transparency | Display Time | |
| **Setup** | Auto Source | Image Reset | Color Reset | RTA | | |
| **Information** | | | | | | |

## Picture

| Menu | Description | Play/Stop |
|---|---|---|
| Brightness | You can use the on-screen menus to change the brightness according to personal preference.<br>Direct Access Feature : When OSD is not on the screen, push the button to adjust brightness.<br>>> Click here to see an animation clip<br>MENU → ↵ → ↵ → ▲, ▼ → MENU | |
| Contrast | You can use the on-screen menus to change the contrast according to personal preference.<br>( Not available in MagicColor mode of Full and Intelligent. )<br>MENU → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU | |

## Color

| Menu | Description | Play/Stop |
|---|---|---|
| MagicColor | MagicColor is a new technology that Samsung has exclusively developed to improve digital image and to display natural color more clearly without disturbing image quality.<br>1 Off — Returns to the original mode.<br>2 Demo — The screen before applying MagicColor appears on the right and the screen after applying MagicColor appears on the left.<br>3 Full — Displays not only vivid natural color but also more realistic natural skin color with clearness.<br>4 Intelligent — Displays vivid natural color with clearness. | |
| Color Tone | The tone of the color can be changed and one of four modes can be selected -Cool, Normal, Warm and Custom.<br>( Not available in MagicColor mode of Full and Intelligent. )<br>MENU → , → → , → → , → MENU | |
| Color Control | Adjusts individual Red, Green, Blue color balance. -Red, Green, Blue<br>( Not available in MagicColor mode of Full and Intelligent. )<br>MENU → , → → , → → , → → , → MENU | |
| Gamma | Gamma correction changes the luminance of the colors with intermediate luminance.<br>- Mode 1<br>- Mode 2<br>- Mode 3<br>MENU → , → → , → → , → MENU | |

Image

| Menu | Description | Play/Stop |
|---|---|---|
| Coarse | Removes noise such as vertical stripes.<br>Coarse adjustment may move the screen image area. You may relocate it to the center using the horizontal control menu.<br>MENU → , → → → , → MENU | |
| Fine | Removes noise such as horizontal stripes.<br>If the noise persists even after fine tuning, repeat it after adjusting the frequency (clock speed).<br>MENU → , → → , → → , → MENU | |
| Sharpness | Changes the clearance of image.<br>( Not available in MagicColor mode of Full and Intelligent. )<br>MENU → , → → , → → , → MENU | |
| H-Position | Changes the horizontal position of the monitor's entire display.<br>MENU → , → → , → → , → MENU | |
| V-Position | Changes the vertical position of the monitor's entire display.<br>MENU → , → → , → → , → MENU | |

OSD

| Menu | Description | Play/Stop |
|---|---|---|
| Language | You can choose one of nine languages.<br>• English, Deutsch, Español, Français, Italiano, Svenska, Русский , Português , Türkçe<br>The language chosen affects only the language of the OSD. It has no effect on any software running on the computer.<br>MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU | |
| H-Position | You can change the horizontal position where the OSD menu appears on your monitor.<br>MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU | |
| V-Position | You can change the vertical position where the OSD menu appears on your monitor.<br>MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU | |
| Transparency | Change the transparency of the background of the OSD.<br>MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU | |
| Display Time | The menu will be automatically turned off if no adjustments are made for a certain time period.<br>You can set the amount of time the menu will wait before it is turned off.<br>- 5 sec, 10 sec, 20 sec, 200 sec<br>MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU | |

## Setup

| Menu | Description | Play/Stop |
|---|---|---|
| Auto Source | Select Auto Source for the monitor to automatically select the signal source.<br>MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU | |
| Image Reset | Image parameters are replaced with the factory default values.<br>MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU | |
| Color Reset | Color parameters are replaced with the factory default values.<br>MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU | |
| RTA | RTA (Response Time Accelerator)<br>A function that accelerates the response speed of the panel so as to provide a sharper and more natural video display.<br>RTA On : Activates the RTA function so that the panel operates at a higher response speed than its original speed.<br>RTA Off : Deactivates the RTA function so that the panel operates at its original response speed.<br>If you turn the power off and on again after switching RTA off, the RTA function is automatically switched On (Factory Setting)<br>MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU | |

Information

| Menu | Description |
| --- | --- |
| Information | Shows a video source, display mode on the OSD screen.<br>MENU → , |

## Check List

Before calling for service, check the information in this section to see if you can remedy any problems yourself. If you do need assistance, please call the phone number on the Information section or contact your dealer.

| Symptom | Check List | Solutions |
|---|---|---|
| No images on the screen.<br>I cannot turn on the monitor. | Is the power cord connected properly? | Check the power cord connection and supply. |
| | Can you see "Check Signal Cable" on the screen? | (Connected using the D-sub cable)<br>Check the signal cable connection.<br><br>(Connected using the DVI cable)<br>If you still see an error message on the screen when the monitor is connected properly, check to see if the monitor status is set to analog.<br>Press SOURCE button to have the monitor double-check the input signal source. |
| | If the power is on, reboot the computer to see the initial screen(the login screen), which can be seen. | If the initial screen (the login screen) appears, boot the computer in the applicable mode (the safe mode for Windows ME/XP/2000) and then change the frequency of the video card.<br>(Refer to the Preset Timing Modes)<br><br>If the initial screen (the login screen) does not appear, contact the Service Center or your dealer. |
| | Can you see "Not Optimum Mode", "Recommended Mode 1440 X 900 60 Hz" on the screen? | You can see this message when the signal from the video card exceeds the maximum resolution and frequency that the monitor can handle properly.<br><br>Adjust the maximum resolution and frequency that the monitor can handle properly.<br><br>If the display exceeds SXGA or 75 Hz, a "Not Optimum Mode", "Recommended Mode 1440 X 900 60 Hz" message is displayed. If the display exceeds 85 Hz, the display will work properly but the "Not Optimum Mode", "Recommended Mode 1440 X 900 60 Hz" message appears for one minute and then disappears.<br>Please change to the recommended mode during this one-minute period.<br>(The message is displayed again if the system is rebooted.) |
| | There is no image on the screen.<br>Is the power | The monitor is in PowerSaver mode.<br><br>Press a key on the keyboard to activate the monitor and |

| | | |
|---|---|---|
| | indicator on the monitor blinking at 1 second intervals? | restore the image on the screen.<br><br>If there is still no image, press the 'SOURCE' button. Then press any key on the keyboard again to activate the monitor and restore the image on the screen. |
| | Connected using the DVI cable? | You may get a blank screen if you boot the system before you connect the DVI cable, or disconnect and then reconnect the DVI cable while the system is running as certain types of graphic cards do not send out video signals.<br>Connect the DVI cable and then reboot the system. |
| I cannot see the On Screen Display. | Have you locked the On Screen Display (OSD) Menu to prevent changes? | Unlock the OSD by pressing the [MENU / ▣] button for at least 5 seconds. |
| The screen shows strange colors or just black and white. | Is the screen displaying only one color as if looking at the screen through a cellophane paper? | Check the signal cable connection.<br><br>Make sure the video card is fully inserted in it's slot. |
| | Have the screen colors become strange after running a program or due to a crash between applications? | Reboot the computer. |
| | Has the video card been set properly? | Set the video card by referring to the video card manual. |
| The screen suddenly has become unbalanced. | Have you changed the video card or the driver? | Adjust screen image position and size using the OSD. |
| | Have you adjusted the resolution or frequency to the monitor? | Adjust the resolution and frequency at the video card. (Refer to thePreset Timing Modes). |
| | The screen can be unbalanced due to the cycle of the video card signals. Readjust Position by referring to the OSD. | |
| The screen is out of focus or OSD cannot be adjusted. | Have you adjusted the resolution or frequency on the monitor? | Adjust the resolution and frequency of the video card. (Refer to the Preset Timing Modes). |
| LED is blinking but no images on the screen. | Is the frequency properly adjusted when checking the Display Timing on the menu? | Adjust the frequency properly by referring to the video card manual and the Preset Timing Modes. (The maximum frequency per resolution may differ from product to product.) |
| There are only 16 colors shown on the screen. The screen colors have changed after changing the video card. | Have the Windows colors been set properly? | Windows XP :<br>Set the resolution at the Control Panel → Appearance and Themes → Display → Settings.<br><br>Windows ME/2000 :<br>Set the resolution at the Control Panel → Display → Settings. |
| | Has the video card been set properly? | Set the video card by referring to the video card manual. |
| There is a message that | Have you installed the monitor driver? | Install the monitor driver according to the Driver Installation Instructions. |

| | | |
|---|---|---|
| reads "Unrecognized monitor, Plug & Play (VESA DDC) monitor found". | See the video card manual to see if the Plug & Play (VESA DDC) function can be supported. | Install the monitor driver according to the Driver Installation Instructions. |
| Check when MagicTune™ does not function properly. | MagicTune™ feature is found only on PC (VGA) with Window OS that supports Plug and Play. | * To check whether your PC is available for MagicTune™ feature, follow the steps below (When Windows is XP);<br><br>Control Panel → Performance and Maintenance → System → Hardware → Device Manager → Monitors → After deleting Plug and Play monitor, find 'Plug and Play monitor' by searching new Hardware.<br><br>MagicTune™ is an additional software for the monitor. Some graphic cards may not support your monitor. When you have a problem with the graphic card, visit our website to check the compatible graphic card list provided.<br>http://www.samsung.com/monitor/magictune |
| MagicTune™ doesn't work properly. | Have you changed your PC or video graphic card? | Download the latest program. The program can be downloaded http://www.samsung.com/monitor/magictune |

Visit the MagicTune™ website and download the installation software for MagicTune™ MAC.

**Check the following items if there is trouble with the monitor.**

- Check if the power cord and the video cables are properly connected to the computer.
- Check if the computer beeps more than 3 times when booting.
  (If it does, request an after-service for the main board of the computer.)
- If you installed a new video card or if you assembled the PC, check if the installed the adapter(video) driver and the monitor driver.
- Check if the scanning ratio of the video screen is set at 56 Hz ~ 75 Hz.
  (Do not exceed 75 Hz when using the maximum resolution.)
- If you have problems in installing the adapter (video) driver, boot the computer in Safe Mode, remove the Display Adapter at the "Control Panel → System → Device Administrator" and then reboot the computer to reinstall the adapter (video) driver.

If problems repeatedly occur, contact an authorized service center.



## Q & A

| Question | Answer |
|---|---|
| How can I change the frequency? | Frequency can be changed by reconfiguring the video card.<br><br>Note that video card support can vary, depending on the version of the driver used.<br>(Refer to the computer or the video card manual for details.) |
| How can I adjust the resolution? | Windows XP :<br>Set the resolution at the Control Panel → Appearance and Themes → Display → Settings.<br><br>Windows ME/2000 :<br>Set the resolution at the Control Panel → Display → Settings.<br><br>Contact the video card manufacturer for details. |

| | |
|---|---|
| How can I set the Power Saving function? | Windows XP :<br>Set the resolution at the Control Panel → Appearance and Themes → Display → Screen Saver.<br>Set the function at BIOS-SETUP of the computer.<br><br>Windows ME/2000 :<br>Set the resolution at the Control Panel → Display → Screen Saver.<br>Set the function at BIOS-SETUP of the computer.<br><br>Refer to Windows/Computer Manual |
| How can I clean the outer case/LCD Panel? | Disconnect the power cord and then clean the monitor with a soft cloth, using either a cleaning solution or plain water.<br><br>Do not leave any remains of the detergent nor scratch the case. Do not allow any water to go inside the monitor. |



## Self-Test

Self-Test Feature Check | Warning Messages | Environment | Useful Tips

Your monitor provides a self test feature that allows you to check whether your monitor is functioning properly.

### Self-Test Feature Check

1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer.
3. Turn on the monitor.

   If the monitor is functioning properly, you will see a box in the illustration below.

   This box appears during normal operation if the video cable becomes disconnected or damaged.

4. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.

   If your monitor screen remains blank after using the previous procedure, check your video controller and computer system; your monitor is functioning properly.

### Warning Messages

If there is something wrong with the input signal, a message appears on the screen or the screen goes blank although the power indicator LED is still on. The message may indicate that the monitor is out of scan range or that you need to check the signal cable.

## Environment

- The location and the position of the monitor may influence the quality and other features of the monitor.
  - If there are any sub woofer speakers near the monitor, unplug and relocate the woofer to another room.
    Remove all electronic devices such as radios, fans, clocks and telephones that are within 3 feet (one meter) of the monitor.

## Useful Tips

- A monitor recreates visual signals received from the computer. Therefore, if there is trouble with the computer or the video card, this can cause the monitor to become blank, have poor coloring, noise, Video mode not supported, etc. In this case, first check the source of the problem, and then contact the Service Center or your dealer.

- Judging the monitor's working condition

  If there is no image on the screen or a "Not Optimum Mode", "Recommended Mode 1440 X 900 60 Hz" message comes up, disconnect the cable from the computer while the monitor is still powered on.

  - If there is a message coming up on the screen or if the screen goes white, this means the monitor is in working condition.
    In this case, check the computer for trouble.

## Specifications

General

| | |
|---|---|
| Model Name | SyncMaster 931BW |

LCD Panel

| | |
|---|---|
| Size | 19 " Wide Diagonal (48 cm) |
| Display area | 408.24 mm (H) x 255.15 mm (V) |
| Pixel Pitch | 0.2835 mm (H) x 0.2835 mm (V) |
| Type | a-si TFT active matrix |

Synchronization

| | |
|---|---|
| Horizontal | 31 ~ 81 kHz |
| Vertical | 56 ~ 75 Hz |

Display Color

16.7M Colors (8bit)

Resolution

| | |
|---|---|
| Optimum resolution | 1440 X 900@60 Hz |
| Maximum resolution | 1440 X 900@75 Hz |

Input Signal, Terminated

RGB Analog, DVI Compliant Digital RGB,
0.7 Vp-p ± 5%, TTL level (V high ≥ 2.0V, V low ≤ 0.8V)

Maximum Pixel Clock

137 MHz

Power Supply

AC 100 - 240V~ (+/- 10%), 50/60Hz

Signal Cable

15pin to 15pin D-sub cable, Detachable
DVI-D to DVI-D connector, Detachable, (Option)

Signal Connectors

15pin 3-row D-Sub connector, 24pin 3-row DVI-D connector

Power Consumption

Less than 42 W

Dimensions (W x D x H) / Weight

448.0 X 58.5 X 311.0 mm / 17.6 x 2.3 x 12.2 inch (Without Stand)
448.0 X 202.2 X 363.9 mm / 17.6 x 8.0 x 14.3 inch (With Stand) / 4.2 kg / 9.3 lbs

VESA Mounting Interface

75 mm x 75 mm (for use with Specialty(Arm) Mounting hardware.)

Environmental considerations

| | |
|---|---|
| Operating | Temperature : 50 °F ~ 104 °F (10 °C ~ 40 °C)<br>Humidity : 10 % ~ 80 %, non-condensing |
| Storage | Temperature : -4 °F ~113 °F (-20 °C ~ 45 °C)<br>Humidity : 5 % ~ 95 %, non-condensing |

Plug and Play Capability

This monitor can be installed on any Plug & Play compatible system. Interaction of the monitor and computer systems will provide the best operating conditions and monitor settings. In most cases, monitor installation will proceed automatically, unless the user wishes to select alternate settings.

Dot Acceptable

TFT LCD panel manufactured by using advanced semiconductor technology with precision of 1 ppm (one millionth) above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen. This is not from bad quality and you can use it without uneasiness.

For example, the number of TFT LCD sub pixels that is contained in this product are 3,888,000.

Design and specifications are subject to change without prior notice.

**Class B Equipment (Information Communication equipment for residential use)**

- This product complies with the Electromagnetic Compatibility Directives for residential use and can be used in all areas including common residential areas.

  (Class B equipment emits less electromagnetic waves than Class A equipment.)



## PowerSaver

- This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor into a low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPMS compliant video card installed in your computer. Use a software utility installed on your computer to set up this feature.

| State | Normal Operation | Power saving mode | Power off (Power button) EPA/ENERGY 2000 |
|---|---|---|---|
| Power Indicator | Blue | Blue, Blinking | Black |
| Power Consumption | Less than 42 W | Less than 1 W (Off-mode) | Less than 1 W |

This monitor is EPA ENERGY STAR® compliant and ENERGY2000 compliant when used with a computer equipped with VESA DPMS functionality.
As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.



## Preset Timing Modes

If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjust the screen as follows.

### Preset Timing Modes

| Display Mode | Horizontal Frequency (kHz) | Vertical Frequency (Hz) | Pixel Clock (MHz) | Sync Polarity (H/V) |
|---|---|---|---|---|
| IBM, 640 x 350 | 31,469 | 70,086 | 25,175 | +/- |
| IBM, 640 x 480 | 31,469 | 59,940 | 25,175 | -/- |
| IBM, 720 x 400 | 31,469 | 70,087 | 28,322 | -/+ |
| MAC, 640 x 480 | 35,000 | 66,667 | 30,240 | -/- |
| MAC, 832 x 624 | 49,726 | 74,551 | 57,284 | -/- |
| MAC, 1152 x 870 | 68,681 | 75,062 | 100,000 | -/- |
| VESA, 640 x 480 | 37,500 | 75,000 | 31,500 | -/- |
| VESA, 640 x 480 | 37,861 | 72,809 | 31,500 | -/- |
| VESA, 800 x 600 | 35,156 | 56,250 | 36,000 | -/- |
| VESA, 800 x 600 | 37,879 | 60,317 | 40,000 | +/+ |
| VESA, 800 x 600 | 46,875 | 75,000 | 49,500 | +/+ |
| VESA, 800 x 600 | 48,077 | 72,188 | 50,000 | +/+ |
| VESA, 1024 x 768 | 48,363 | 60,004 | 65,000 | -/- |
| VESA, 1024 x 768 | 56,476 | 70,069 | 75,000 | -/- |
| VESA, 1024 x 768 | 60,023 | 75,029 | 78,750 | +/+ |
| VESA, 1152 x 864 | 67,500 | 75,000 | 108,000 | +/+ |
| VESA,1280 x 960 | 60,000 | 60,000 | 108,000 | +/+ |

| | | | | |
|---|---|---|---|---|
| VESA,1280 x 1024 | 63,891 | 60,020 | 108,000 | +/+ |
| VESA,1280 x 1024 | 79,976 | 75,025 | 135,00 | +/+ |
| VESA, 1440 X 900 | 55,935 | 59,887 | 106,500 | -/+ |
| VESA, 1440 X 900 | 70,635 | 74,984 | 136,750 | -/+ |

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle and the inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit : kHz

Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called Vertical Frequency or Refresh Rate. Unit : Hz

## Contact SAMSUNG WORLD-WIDE

If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care center.

| | | |
|---|---|---|
| North America | | |
| CANADA | 1-800-SAMSUNG (7267864) | http://www.samsung.com/ca |
| MEXICO | 01-800-SAMSUNG (7267864) | http://www.samsung.com/mx |
| U.S.A | 1-800-SAMSUNG (7267864) | http://www.samsung.com |
| Latin America | | |
| ARGENTINE | 0800-333-3733 | http://www.samsung.com/ar |
| BRAZIL | 0800-124-421 | http://www.samsung.com/br |
| CHILE | 800-726-7864 (SAMSUNG) | http://www.samsung.com/cl |
| COSTA RICA | 0-800-507-7267 | http://www.samsung.com/latin |
| ECUADOR | 1-800-10-7267 | http://www.samsung.com/latin |
| EL SALVADOR | 800-6225 | http://www.samsung.com/latin |
| GUATEMALA | 1-800-299-0013 | http://www.samsung.com/latin |
| JAMAICA | 1-800-234-7267 | http://www.samsung.com/latin |
| PANAMA | 800-7267 | http://www.samsung.com/latin |
| PUERTO RICO | 1-800-682-3180 | http://www.samsung.com/latin |
| REP. DOMINICA | 1-800-751-2676 | http://www.samsung.com/latin |
| TRINIDAD & TOBAGO | 1-800-7267-864 | http://www.samsung.com/latin |
| VENEZUELA | 1-800-100-5303 | http://www.samsung.com/latin |
| Europe | | |
| BELGIUM | 02 201 2418 | http://www.samsung.com/be |

| | | |
|---|---|---|
| CZECH REPUBLIC | 844 000 844 | http://www.samsung.com/cz |
| DENMARK | 38 322 887 | http://www.samsung.com/dk |
| FINLAND | 09 693 79 554 | http://www.samsung.com/fi |
| FRANCE | 08 25 08 65 65 (€ 0,15/min) | http://www.samsung.com/fr |
| GERMANY | 01805 - 121213 (€ 0,12/Min) | http://www.samsung.de |
| HUNGARY | 06 40 985 985 | http://www.samsung.com/hu |
| ITALIA | 199 153 153 | http://www.samsung.com/it |
| LUXEMBURG | 02 261 03 710 | http://www.samsung.lu |
| NETHERLANDS | 0900 20 200 88 (€ 0.10/Min) | http://www.samsung.com/nl |
| NORWAY | 231 627 22 | http://www.samsung.com/no |
| POLAND | 0 801 801 881 | http://www.samsung.com/pl |
| PORTUGAL | 80 8 200 128 | http://www.samsung.com/pt |
| SLOVAKIA | 0850 123 989 | http://www.samsung.com/sk |
| SPAIN | 902 10 11 30 | http://www.samsung.com/es |
| SWEDEN | 08 585 367 87 | http://www.samsung.com/se |
| U.K | 0870 242 0303 | http://www.samsung.com/uk |
| CIS | | |
| RUSSIA | 8-800-200-0400 | http://www.samsung.ru |
| UKRAINE | 8-800-502-0000 | http://www.samsung.com/ur |
| Asia Pacific | | |
| AUSTRALIA | 1300 362 603 | http://www.samsung.com/au |
| CHINA | 800-810-5858, 010- 6475 1880 | http://www.samsung.com.cn |
| HONG KONG | 2862 6001 | http://www.samsung.com/hk |
| INDIA | 3030 8282, 1800 1100 11 | http://www.samsung.com/in |
| INDONESIA | 0800-112-8888 | http://www.samsung.com/id |
| JAPAN | 0120-327-527 | http://www.samsung.com/jp |
| MALAYSIA | 1800-88-9999 | http://www.samsung.com/my |
| PHILIPPINES | 1800-10-SAMSUNG (7267864) | http://www.samsung.com/ph |
| SINGAPORE | 1800-SAMSUNG (7267864) | http://www.samsung.com/sg |
| THAILAND | 1800-29-3232, 02-689-3232 | http://www.samsung.com/th |
| TAIWAN | 0800-329-999 | http://www.samsung.com/tw |
| VIETNAM | 1 800 588 889 | http://www.samsung.com/vn |
| Middle East & Africa | | |

| | | |
|---|---|---|
| SOUTH AFRICA | 0860 7267864 (SAMSUNG) | http://www.samsung.com/za |
| U.A.E | 800SAMSUNG (7267864) | http://www.samsung.com/mea |



## Terms

### Dot Pitch

The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit : mm

### Vertical Frequency

The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called Vertical Frequency or Refresh Rate. Unit : Hz

Example : If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

### Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit : kHz

### Interlace and Non-Interlace Methods

Showing the horizontal lines of the screen from the top to the bottom in order is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.

### Plug & Play

This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

### Resolution

The number of horizontal and vertical dots used to compose the screen image is called 'resolution'. This number shows the accuracy of the display. High resolution is good for performing multiple tasks as more image information can be shown on the screen.

Example :If the resolution is 1440 X 900 , this means the screen is composed of 1440 horizontal dots (horizontal resolution) and 900 vertical lines (vertical resolution).

Contact SAMSUNG WORLD-WIDE Terms For Better Display Authority

## For Better Display

Adjust computer resolution and screen injection rate (refresh rate) oncomputer as described below to enjoy the best quality of picture. You can have an uneven quality of picture in the screen if the best quality of picture is not provided in TFT-LCD.

- Resolution : 1440 X 900
- Vertical frequency (refresh rate) : 60 Hz

TFT LCD panel manufactured by using advanced semiconductor technology with precision of 1ppm (one millionth) above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen.

This is not from bad quality and you can use it without uneasiness.

- For example, the number of TFT LCD sub pixels that is contained in this product are 3,888,000.

- When you clean the monitor and the panel outside, please apply the recommended small amount of cleaner by using soft and dry cloth and polish it. Let LCD area not to be forced but to be scrubbed out softly.
  If excessive force is applied, you can have a stain on it.
- If you are not satisfied with the quality of picture, you can get better quality of picture by executing "auto adjustment function" in display screen that is appeared as window termination button is pressed.
  If there's still noise after automatic adjustment, use FINE/COARSE adjustment function.
- If you view a fixed screen for an extended period of time, residual image or blurriness may appear. Change the mode to energy save or set a screensaver to moving picture when you need to be away from the monitor for an extended period of time.



## Authority

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# PRODUCT INFORMATION (Image Retention Free)

LCD Monitors and TVs may have image retention when switching from one image to another especially after displaying a stationary image for a long time.
This guide is to demonstrate correct usage of LCD products in order to protect them from Image retention.

- **Warranty**
  Warranty does not cover any damage caused by image retention.
  Burn-in is not covered by the warranty.

- **What is Image retention ?**
  During normal operation of a LCD panel, pixel image retention doesn't occur. However, if the same image is displayed for a long time, a slight difference in electric charge accumulates between the two electrodes which encase the liquid crystal. This may cause the liquid crystal to build up in a certain areas of the display. Thus, the previous image is retained when switching to a new video image. All display products, including LCD,are subject to image retention. This is not a product defect.

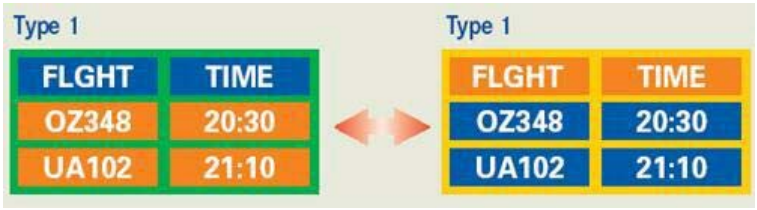
  Please follow the suggestions below to protect your LCD from image retention

- **Power Off, Screen Saver, or Power Save Mode**
  Ex)
  - Turn the power off when using a stationary pattern.
    - Turn the power off for 4 hours after 24 hours in use
    - Turn the power off for 2 hours after 12 hours in use
  - Use a Screen saver if possible
    - Screen saver in one color or a moving image is recommended.
  - Set the Monitor to power off with the PC Display Properties Power Scheme.

- **Suggestions for specific applications**
  Ex) Airports, Transit Stations, Stock Markets, Banks, and Controlling Systems
  We recommend that you follow set up of your display system program as below:

- **Display Information together with Logo or Moving image cycle.**
  Ex) Cycle : Display Information for 1 hour followed by a
  Display Logo or moving image for 1 minute.

- **Change the Color Information periodically (Use 2 different colors).**
  Ex) Rotate the Color Information with 2 colors every 30 minutes.




Avoid using a combination of characters and background color with large difference in luminance.
Avoid using Grey colors, which can cause Image retention easily.

- Avoid: Colors with big difference in luminance (Black & White, Grey)

Ex)

- Recommended settings: Bright colors with little difference in luminance

- Change the characters color and background color every 30 minutes

Ex)

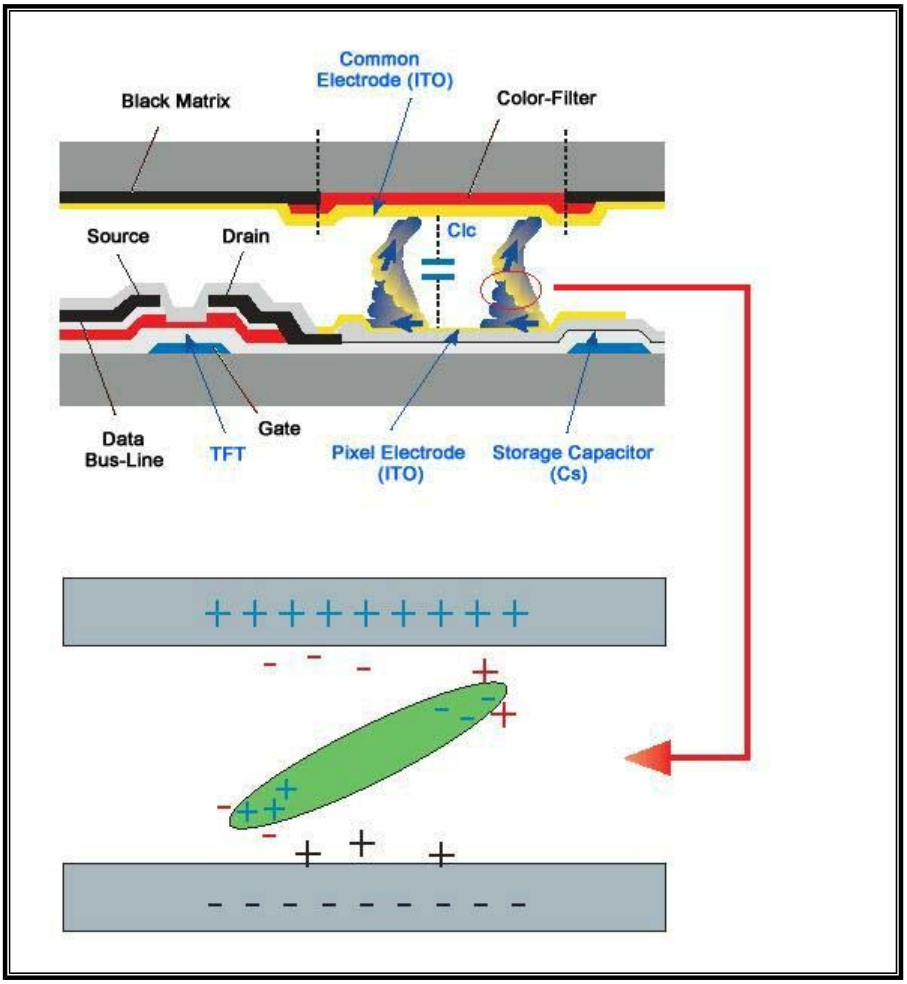
- Every 30 minutes, change the characters with movement.

Ex)

- **The best way to protect your monitor from Image retention is to set your PC or System to operate a Screen Saver program when you are not using it.**

  Image retention may not occur when a LCD panel is operated under normal conditions.

  Normal conditions are defined as continuously changing video patterns. When the LCD panel is operated for a long time with a fixed pattern (-over 12 hours-), there may be slight difference in voltage between electrodes that work the liquid crystal (LC) in a pixel. The voltage difference between electrodes increases with time, forcing the liquid crystal to lean. When this occurs, the previous image may be seen when the pattern is changed.
  To prevent this, the accumulated voltage difference must be decreased.




- Our LCD Monitor satisfies ISO13406-2 Pixel fault Class II